‘We’re not run on Numbers, We’re People, We’re Emotional People’: Exploring the Experiences and Lived Consequences of Emerging Technologies, Organizational Surveillance and Control among Elite Professionals

Abstract

The deployment of digital technologies and data analytics within contemporary organizations are continually seeking to capture vast reams of information to shape employee performance and guide behaviour. However, there is a need to further advance our understanding of the effects and unintended consequences of these technologies within differing organizational contexts. Drawing on the experiences of members connected to a UK-based professional Rugby Union club, we focus on the impact of emerging technologies and ubiquitous surveillance practices in governing employee behaviour, shifting workplace boundaries and providing the ability to resist a mode of organizational control governed by data analytics. Specific emphasis is placed upon exposing the lived consequences and tensions that emerge among employees subjected to an intensive mode of organizational surveillance. In so doing, this study highlights the manner in which emerging technologies and surveillance practices may contribute towards feelings of anxiety, precariousness and performance fatigue among their employees. Through this analysis, we aim to provide a critical understanding of managerial and leadership techniques of control, surveillance and knowledge production that may prove relevant for future research in wider organizational settings shaped by technological transformations and new forms of data-driven management.

Introduction

Through the advent of digitization and an increased reliance upon advanced algorithms used to unearth 'meaningful' patterns and expose 'objective' truths, our contemporary understanding of knowledge creation and dissemination has radically transformed (Anderson, 2008; boyd and Crawford, 2012; Lyon, 2015). The storage and processing of data has reached a level of proficiency through which petabytes of information—where the prefix *peta* signifies a unit of a quadrillion—can be exchanged across networks of communication and virtual databases instantaneously (Gitleman and Jackson, 2013). The increased propensity to quantify human performance through data analytics has led to the privileging of a particular kind of knowledge, one that professes to demonstrate a higher degree of accuracy and reduce, or perhaps simplify organizational complexity (Hansen and Flyverbom, 2015). Thus, the infiltration of technology and its associated data information systems have formed a common component of the structures and strategies that assist operational efficiencies amidst an array of organizational contexts.

A growing literature—dispersed across a range of disciplines—has begun to cast a critical eye over the use of ubiquitous surveillance technologies to quantify and determine employee productivity (see Ball, Di Domenico and Nunan, 2016; Flyverbom, Leonardi, Stohl and Stohl, 2016; Sewell, Barker and Nyberg 2011; West and Bowman, 2016). However, there is a need to further advance our understanding of the lived effects and unintended consequences of these technologies and how they operate within differing organizational contexts, specifically in relation to employee experiences of workplace surveillance and public/private boundaries, knowledge production and performance measurement and the regulation of work life choices and everyday habits (Ball et al., 2016; Leonardi and Barley, 2010; Orlikowski, 2007; Orlikowski and Scott, 2008; Sewell et al., 2011). Therefore, the aim of this paper is to provide an empirical account of the implications surrounding a comprehensive and intensive mode of organizational surveillance, and to demonstrate the consequences of deploying data-driven systems of performance management within a working environment seeking to integrate the use of emerging technologies. Here our reference to 'emerging technologies' places specific emphasis on ubiquitous computing, that is the creation of an environment, 'in which computer sensors (such as radio frequency identification tags, wearable technology, smart watches) and other equipment (tablets, mobile devices) are unified with various objects, people, information, and computers as well as the physical environment' (Cascio and Montealegre, 2016: 350). Following the work of Ball et al (2016), we look to exemplify the

lived normativities, surveilled subjectivity and individual concerns that arise as a consequence of data driven surveillance among employees within a specific organizational context. In so doing, our work seeks to contribute towards the broader field of organization studies by further illuminating the role and impact that technology and data-led strategies of performance measurement have on influencing behavioural practices, workforce collaboration, human agency and control. Our analysis aims to provide rich empirical insight into the purpose and consequences of emerging technologies and leadership techniques reliant on data analytics, eliciting wider reflections on the capacity of such practices to influence the way individuals engage with organizations and cope with an intensive mode of workplace surveillance.

We construct our analyses based upon narratives acquired from 'elite professionals' (Brown and Coupland, 2015) and staff members located at the Ravens RFU, a Gallagher Premiership English rugby football union club. In drawing upon this particular case study, the article proceeds as follows: first we provide a review of literature concerning workplace surveillance and technology. This is followed by a critical analysis of the experiences of our interviewees. We end with a discussion that situates these findings in light of the wider literature and broader implications for theory and practice surrounding the role of emerging technologies in creating sites of conformance, subjugation or resistance within contemporary occupations.

Workplace surveillance, monitoring and control

The implementation and normalisation of monitoring and measurement practices within the workplace is not a new phenomenon and has formed a common component of contemporary organizational culture. The regulation of work performances through careful measurement and close monitoring of behaviour can be linked historically to the bygone 'laboratories' founded through Taylorism (1911), where roles were orchestrated upon the premise of work grounded in efficiency, outputs and design to ensure maximum productivity (Clegg, 2009). With the introduction of advanced technology, techniques of observation have altered dramatically over time, placing importance upon the mobility of information systems and the, 'computer age version of universal transparency' (Zuboff, 1989: 322). Modern organizational studies examining workplace surveillance have extended their analyses to demonstrate the varying practices of monitoring and control, and the formal or informal nature to which differing modes of surveillance can occur (Sewell, 1998; Sewell and Wilkinson, 1992; Sewell and Barker, 2006; Sewell, Barker and Nyberg, 2011). Studies have uncovered the political dynamics of managing transparency, and the replication or resistance of dominant

cultural discourses, power relations and workplace structures (see Ball and Wilson, 2000; Ball, 2010; Barker, 1993; Barker and Cheney, 1994; Collinson, 1999; Coombs, Knights and Willmott, 2002; Flyverbom et al., 2016; Sewell and Barker, 2006; Sewell et al., 2011). Additional research has looked to the impact of surveillance mechanisms and their role in influencing the discipline and enabling of discursive identity strategies and the ability, or lack thereof, to navigate alternative narratives of self far removed from dominant institutional norms (Brown and Lewis, 2011; Brown et al., 2010; Brown and Toyoki, 2013; Author et al., 2016; Thompson, 2003; Thompson and Ackroyd, 1995). Enquiry into the relationship between electronic monitoring and the development of trusts among employees and management has also revealed the sinister social power that contemporary surveillance mechanisms can enact within organizations (Ball and Wilson, 2000; Fleming and Spicer, 2014). The implementation of electronic monitoring and surveillance has been seen to create an environment of enhanced visibility, contributing towards the increased probability to report authoritative personnel as deceptive in their motives of deployment, aspects that have led to the eradication of trust in management (Bloomfield and Danieli, 1995; Holland et al., 2015; Zureik, 2003).

The impact of surveillant technologies and management information systems within contemporary work settings have created environments through which behaviour responds to the empowering, and/or disempowering, nature of mechanisms deployed to monitor and control the workforce. Often such experiences are conceptualised in relation to notions of subjectivity and the normalization of actions and values that arise as a consequence of deploying varied mechanisms of surveillance. Typically, studies that focus upon the technical capacities of observation, and the circulation of power relations evident within organizational contexts, adopt a Foucauldian approach to understand how these features work to control and perpetuate specific social values (see Anteby and Chan, 2018; Barker, 1993; Barker and Cheney, 1994; Brown and Coupland, 2015; Brown and Toyoki, 2013; Collinson, 1999; Kayas and Wright, 2018; Thornborrow and Brown, 2009). Although such studies provide key insight into the disciplinary procedures guiding the actions and behaviours of their organizational incumbents, the application of Foucault's (1979) work has received critical appraisal from a number of authors (Bauman, 2000; Lyon, 2001; Norris and Armstrong, 1998; Yar, 2003). The emergence of post-panoptic concepts (Bigo, 2006; Clarke, 1994; Latour, 2005; Lyon, 1993; Mathiesen, 1997) have sought to challenge the Foucauldian approach to theorising surveillance and social control, situating this line of enquiry amidst a more contextual manner that urges a consideration of the progressive dimensions of surveillant capabilities to question how they may be implemented, contested and viewed as an 'orientation' (Bauman and Lyon 2013).

Contemporary modes of control have come to accentuate the interconnectedness of monitoring and computer devices, or human points of contact, capturing and recording the many components that comprise the human body (Martinez, 2011). Through the acquisition and dissemination of data via 'discrete flows', the individual is relocated in a multitude of contexts represented as a 'data double', facilitating the formation of digital personas and the monitoring of 'digital shadows' (Agre, 1994). These automated processes enhance the ability to control specific populations as surveillance becomes more mobile, dispersed, interconnected, transcending the borders and boundaries of institutional spaces (Latour, 2005).

In drawing upon contemporary literature that examines the impact of workplace surveillance on employee behaviour, this study aims to locate our understanding of organizational control as functioning through a managerial model infiltrated by emerging technologies, a culture engineered to anticipate and identify specific behaviour, constructing categories based upon a commonality contrived through statistical frequencies (Mattelart, 2010). Upon referring to the concept of culture, we seek to expose the norms, values, beliefs and practices that comprise organizational life, aspects that are socially organized and incorporated into the actions of those who manage individuals and instigate strategy (Coombs et al., 1992). In doing so, we exemplify the lived experiences of an increased reliance upon a 'numerical language of control' (Deleuze 1992: 5), exposing the tensions that exist among employees located at the centre of this working environment, and the ability of organizations to encourage new ways of behaving, interacting and engaging with everyday routine tasks and behaviour (Smith, 2016).

Method and context

This article draws upon research carried out with employees at a Premiership Rugby Football Union (RFU) club termed the Ravens (pseudonym). Grounded in a constructionist ontology and interpretivist epistemology (Weber, 1969), the premise of the research was to understand how emerging technologies and ubiquitous surveillance practices impacted upon the work-life experiences of the interviewees. In total 12 participants were selected for the study, including ten professional players, the Head Coach (at the time) and a first-team performance analyst. The participants were considered partners in the research process and were asked, through in-depth semi-structured interviews, to reflect primarily upon the influence of technology and performance management within their working environment. Drawing on empirical insights that exposed the manner in which socio-technological relations

mediated everyday interactions allowed the researchers to 'close in' on the real-life situations and lived consequences of a digital, ubiquitous working environment (Flyvbjerg, 2006).

The Ravens RFU club has maintained a long history of success in both the English and European club game, attracting a diverse range of players with varying national and international playing experience. At the time of the study, the club deployed a comprehensive range of technological devices to map, track and monitor individual performances and player well-being. The use of laptops, stadium/training camcorders, global positioning systems (GPS), heart rate monitors, body fat/skinfold recordings, mood score sheets, iPhones/iPads, central servers and mobile application software (mobile app) was reflective of the integrated technical–administrative routines deployed by the organization's managerial staff. Extracting data from these various sources, with a heavy reliance on Key Performance Indicators (KPIs), was central to the management's strategy for validating performances and establishing benchmarks upon which improvements could be made. Analysts working at the Ravens RFU club were responsible for collating and coding performance data retrieved from training sessions and competitive matches. As part of this process, the analysts were reliant upon the video analytics software 'Hudl Sportscode'[i] to examine digitized video footage and code key instances that related to specific team or individual performance indicators. Additional descriptors related to specific KPIs that focused upon strategic, operational, team and individual improvements could be attached to each code in a bid to provide further detail surrounding individual failures and successes. Once the data had been coded it could then be entered into excel spreadsheets where KPIs could be scrutinized in further detail. Data associated with basic biometric measurements, work rate in relation to wearable GPS trackers and heart rate monitoring, mood, sleep and wellbeing scores were—at the time of the interviews—collated by the club's strength and conditioning coaches. This performance data was presented to staff and players at the club in the form of edited video footage, heat maps, descriptive statistics and charts. All players were responsible for recording and reporting on both sleep, mood and wellbeing scores as part of their daily tasks through questionnaires administered on a mobile app. Whilst some aspects of the biometric data (e.g. body fat percentages) and performance/work rate data were made publicly available for staff and team members to view through the Club's mobile app, data pertaining to wellbeing was kept for review by individual players and staff members only. Further biological material was taken through urine, blood, hair (from any part of the body) and oral fluid for the purposes of testing for illicit drugs.

The disclosure of team and individual successes and failures post-match took the form of a Monday morning review meeting with all players and coaching staff present. In addition, players were responsible for reviewing individual data on a daily basis either within the confines of the organization or remotely through the mobile app, with individual login data monitored by analysts and managerial staff to ensure reviews were completed on a timely basis. The mobile app itself was accessible via iPads provided by the Club or through individual personal mobile devices, and was host to edited video footage, individual and team statistics, wellbeing, mood and sleep scores, biometric data, weekly schedules, medical appointments and a message board. Acting as a performance management system, the app was designed to improve communication between players and staff within the Club, increase accountability, develop personal improvement plans and allow for Club-wide analytics. Data retrieved over the course of a season from the performance analysts and strength and conditioning coaches were amalgamated and an algorithm used to produce a player rating that formed an individual Work Efficiency Index (WEI) for each player; a performance measure that impacted upon both career retention and progression. Thus, digital and collaborative practices were implemented to produce knowledge that would inform decisions and organize employees in such a way that performance and behaviour could be shaped by, and respond to, a data-driven mode of organizational control.

Data collection and analysis

Data for the study were collected from interviews taking place both within the confines of the club ground and at locations situated in private settings 'off-site'. Interviews conducted at the club were carried out in a private annex located next to the ground allowing for conversations to occur in an unimposing and familiar setting. Purposive sampling was adopted by the research team and provided the capacity to acquire insights through participants' experiences therein (Patton, 2002). This sampling approach, which included players across the spectrum—from new professionals to more experienced international players—enabled access to a group of individuals perceived as most likely to provide in-depth accounts. Access to the participants was gained through personal connections established between the authors of the paper and the participants. Importantly, a familiarity between both the researcher and the researched promoted a sense of trust and acceptance that allowed access to information that may have otherwise remained hidden to those with complete 'outsider' status (Denscombe, 2010). The semi-structured interviews conducted with the participants ranged from 60-90 minutes in duration, and were utilised to elicit information rich cases with which to analyse and expose

the participants' experiences of surveillance and technology within the organization under study. The interview data were collected and transcribed verbatim. Through a process of open coding the data were thoroughly examined, organised, categorised and compared for similarities and differences (Corbin and Strauss, 2008). Within this stage of analysis, several commonalities emerged that came to signify the participants' shared ideas across the accounts gathered; wherein issues associated with performance management, surveillance, control, engagement with technology and the processing of data occurred as consistent in a variety of semblances.

Through an iterative process of scanning and rescanning the data (Fitzgerald and Dopson, 2009), and by adopting a pattern coding approach to this particular step, material related to the initial summarising segments of data could be grouped into a smaller number of themes to create more meaningful units of analysis. For example, upon reviewing data related to the participant experiences of performance management and issues of surveillance, the construct of a heightened visibility and associated feelings of fear, anxiety and precariousness reoccurred with high frequency. As such, 'visibility in the workplace' emerged as an overarching theme with which to explain the impact of performance management measures and the dominant modes of surveillance that operated within the organization. The additional overarching themes—identified as 'regulation, control and workplace boundaries' and 'interpreting and resisting data'—were further derived through categorising recurring comments surrounding emerging technologies and their infiltration into the personal lives of the participants and the ability, or lack thereof, to interpret or challenge decisions made concerning performance data. These overarching themes were representative of the most frequently occurring accounts that emerged from the participants' reflections on engaging with technology, control and the processing of data. By cross-checking datasets and identifying patterns throughout the duration of the data collection phase, the most common reoccurring threads in the participants' accounts could be verified and the key overarching themes determined (see Miles and Huberman, 1994).

Findings

The analysis produced a variety of complex issues that underpinned participant perceptions of organizational practice. In the discussion that follows, these issues have been categorized in line with three central themes that collectively represent the participants' experiences of a workplace culture engaged with emerging technologies and a data-driven mode of performance

management. These themes comprise: (i) visibility in the workplace; (ii) regulation, control and workplace boundaries (iii) interpreting and resisting data.

Visibility in the workplace

The inclusion of a ubiquitous range of surveillance mechanisms and data analytics exposed individual performances and promoted a culture that reinforced preferred 'truths', restricted behaviour and guided key career decisions. Captain of the club and seasoned professional Robert Armstrong reflected on the Work Efficiency Index, commenting on the consequences that arose from a culture that rendered employee performance visible through the use of an algorithm to determine work rate and employability:

> **Interviewer:** Did anyone question the stats?
> **Robert:** No, that was kind of the point it was, these are the statistics and you can't question them sort of thing…There was a thing called the Work Efficiency Index, which was basically like everything you did like divided by how many good things and bad things…the crazy thing was is that it literally gave you a figure.
> **Interviewer:** And they used that here?
> **Robert:** They did before, the previous coach…it counted up everything you did in a game, every instance, so normally there'd be like seventy things you did in a game, it would then work out how many were negative and how many were positive and do some sort of calculation divided by the time you were on the pitch, and then you'd get an actual figure of your WEI, your Work Efficiency Index.
> **Interviewer:** And this was brought to you on the Monday morning?
> **Robert:** Yeah, yeah. Or in selection, or even you'd get to the stage where it would be in contract negotiations…and that to me is like, if you're tellin' me I'm not getting a deal because my Work Efficiency Index is down, how do I impact my Work Efficiency Index, how do I change my Work Efficiency Index? And they [coaches] were like, "well you do this, you do that." And it's like, well it's not very tangible, because the one thing you do, that might take away from another thing and you might play ten less minutes or whatever.
> **Interviewer:** So the Work Efficiency Index could dictate whether a person had a job here or not?
> **Robert:** Yeah, well they always said it was part of the analysis that went into rehiring or firing or recruiting or whatever.
> **Interviewer:** That must have been a lot of pressure?
> **Robert:** Yeah, in the wrong way, because you're trying to affect your Work Efficiency Index rather than the result of the game.

The use of data analytics to determine and predict performances inevitably led to an enhanced visibility, concentrating those 'under the eye' of the organization to regulate their behaviour so as to portray favourable 'digital personas' (Clarke, 1994). The consequences associated with the (re)creation of a working environment engineered upon multiple performance indicators, and the ability to reveal individual work rate and performance, was further highlighted by John Duncan, Head Coach, and first team players Alun and Hector:

Interviewer: If you look back to the previous regime, with the former coach and the big datasets, do you think that affected the players to take risks on the field?
John Duncan: Yeah, without a question. Fear, fear, they were, "I can't do this because my stats might be wrong, might look wrong and why would I put myself in that position on a Monday morning because I can't win". That is exactly what it was, and players froze, players froze.

Alun: They're [the coaches] always asking the boys questions. So they'd be like, "Alun, what do you think about this [the data]?", and I've just fucking woken up, and I'm like, "oh, shit".
Interviewer: Does that put added pressure on? You've got to come to meetings prepared?
Alun: Yeah, exactly. Nick Bradshaw [a new player] who just got here, he said to me like, "those meetings, I feel like everyone's under pressure in there and you can't relax, what's going on there?" And I was like, "well, that's just how it is Nick".

Hector: So all the training footage gets put up [on the app], all the games, matches, all the coach's details, reviews go in here, messages, admin stuff all gets put on.
Interviewer: How often do you have to review this?
Hector: I just get a notification through saying this has happened, a preview meeting or stuff like that.
Interviewer: Are there any repercussions if you don't report on an action or not watch something?
Hector: Well if you get asked something in a meeting and you don't know it then you're gonna get done, they would expect you to know it and that would affect their [the coaches] perception of you. So if you've not done your review then you're not gonna have the right attitude.

In these conditions, a numerical focused strategy to management and a culture of hyper-connectivity sought to enhance visibility among its employees. The use of emerging technologies and data analytics to assess, evaluate and broadcast performance back into the workplace exerted pressure upon the players to become familiar with their own datasets and that of others, stimulating a sense of fear and anxiety surrounding decisions made in relation to performance outcomes, job security and perceptions of professionalism. As a consequence, the performative nature of this particular mode of transparency made visible, spoke to, and legitimised certain truths for the purpose of directing accountability and reinforcing an adherence to a preferred behaviour deemed acceptable by the organizational hierarchy (Flyverbom et al., 2015; Roberts, 2009). By aligning the renewal or termination of employment with reference to continuous measures of performance, the organization created a mode of being that was able to split individual units from each other and foster a logic of competition. Employees developed a specific relation to themselves and their peers that encouraged an individualized work ethic and enhanced mode of self-surveillance, a way of managing that

seeks to enculturate individuals into believing that this mode of organizing social relations is beneficial to all (Weiskopf and Loacker, 2006). Through the implication of data and routine organizational surveillance, players highlighted the presence of an individualized work ethic, an aspect that was deemed, by some, to be detrimental towards the overall performance of the organization, yet by others a necessary aspect of professionalism:

> **Henry:** In all honesty it makes it more individual in my eyes. You then take on your individual responsibility, as opposed to you're a member of a team and you need to do whatever you can for that team in order for it to succeed. It tends to be now that you'll get guys that will be like, as long as all my lights are green and everything's good I'm happy days, I'm sat back, I'm fine, and that for me takes an emphasis off of what you've actually got to do for the team.
>
> **Joe:** It's all extreme, like the coaches we've got are…you know in analysing things in that detail are obviously looking to leave no hiding place for people and rugby is a game of fifteen people… I suppose I think you know there are places you can cut corners but if you look at it [the data] in that amount of detail everyone's gotta perform at their best the whole time.
>
> **Phil:** Everything's graded and that's just the way professionalism has gone because it gives coaches and players a tangible figure to compare, ultimately we're in a comparison game aren't we?

Although some individuals attempted to avoid engaging with certain technologies, the pervasive nature of surveillance measures deployed to track performance and player habits infiltrated the consciousness of the interviewees, accentuating the attention to modes of self-surveillance and a distrust of technologies adopted by the management. Upon discussing online evaluations and the mobile app used by the organization, Craig, Joe and Jon, highlighted an acute awareness of the ubiquitous nature of surveillance practices, the need to regulate behaviour and an encroaching suspicion of the motives surrounding the tools used to monitor and report on performance:

> **Craig:** I wouldn't be surprised, I don't know it, but I wouldn't be surprised if this app told you where you were when you logged on. You know when you activate on something, like your HSBC account, when you log onto that on your phone they know where you are, like a signal goes to them, like I wouldn't be surprised if they have that…I wouldn't be surprised if that was there, and yeah I do think it's a bit invasive, I think that level we're now at in rugby, if you wanna be in the top two teams in the country that's something you've gotta put up with.
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> **Joe:** It [data surveillance] kind of makes you think, kind of makes you analyse everything a bit more, think more, a bit harder, think about what you do, how you act

> around the club. If you are in the gym, or canteen, you are aware of yourself—your actions. If the coaches are eating next to you, it is not the same as sitting next to the players.
>
> **Jon:** You have to cover your arse. The website is watching.

The organization under study fostered a mode of control that fixed employees in a continuous network of observation, whereby 'deformable and transformable' (Deleuze, 1992: 6) coded figures marked access to information and regulated behaviour through the actualisation of identities—in this instance 'data doubles'—to determine and define acceptable organizational citizens. In pursuing this approach to organizational control emphasis is placed upon locating the 'dividual' amidst open and interconnected networks that facilitate more abstract and numerical modes of organizational surveillance, as Deleuze and Guattari (2002: 389) note, 'the number has always served to gain mastery over matter, to control its variations and movements'. The magnification of data analytics increased levels of visibility pertaining to individual performance and encouraged a culture of self-surveillance, suspicion and anxiety surrounding career progression. Performance metrics were programmed into the texture of the interviewees' everyday lives, (re)producing a relentless and managed visibility that worked to create an individualized mode of surveillance (Ganesh, 2016). For many this approach contained inherent contradictions concerning the assessment of individual performances and the overall operational success of the organization. However, an acceptance and assimilation of performance metrics and a heightened level of visibility in relation to worker productivity were integrated into the attitudes, practices and everyday life of the interviewees; an aspect that was perceived as a routine part of the organization's culture and affecting behaviour beyond the borders of institutional space.

Regulation, control and workplace boundaries

Establishing a mode of control based upon strategies that fix the individual through assigning numerical identifiers of worth impacted upon the regulation of behaviour external to the organization. This became evident upon discussing metrics heavily aligned to the somatic determinants of performance. To ensure longevity within the organization and avoid financial penalties that could impede upon life and relations away from the workplace, interviewees spoke of the need to maintain and regulate their weight on a consistent basis:

> Every month you're pinched off of eleven sites, you're given an average skinfold…this year they've been very brutal...so the off-season is gonna be tough for boys who

> struggle to keep weight off…but this year they put fines on it, financial fines. So if your target is seventy, if you come back at seventy-one there's a two hundred pound fine, if you come back at seventy-six, which is five mils [millimetres] more, four hundred [pounds], five mills more, so eighty-one, six hundred pound.
> **Interviewer:** Do the guys care about that?
> **Craig:** I care about that…do the high paid players care about that, no…but that's quite a big overhead for some people in the lower end of the team… I remember one of the players last year was buying a house and his missus was like, "you're not eatin' for four weeks because we can't afford to do the house up".

The emphasis upon a numerical and evidence-based approach to determining individual success criteria situated data surveillance more proximal to the subject and their lifeworld, impacting upon the everyday habits and personal life choices of those seeking to positively affect key performance indicators (McCabe, 2016). Emphasis upon strict metrics concerning body weight and composition placed added pressure upon individuals to engage with dramatic weight loss and gain, with the potential to encourage unhealthy behavioural practices and exact control through tailored and individualized criteria:

> **Phil:** There's not many jobs where you go to work and every once a week someone pinches how fat you are, or you have to weigh in everyday … I've played in teams where [coaches have said], "right Phil, I want you to get as heavy as you can possibly get, while still being able to move around the rugby field", the coach changes and came in and said, "You're too heavy for the way I wanna play", so all what I'd done for two years I had to undo in about six months, you know!
>
> **Joe:** We've got a pretty good life, generally, but I suppose the payoff is you're constantly under pressure, battering each other, sore from the game…and also the pressure of we're gettin' our fat taken on Tuesday, I'd better not eat that.

This process of 'dataveillance' (Clarke, 1998) once again evoked feelings of pressure and anxiety among the interviewees, most noticeably surrounding the demands placed upon managing weight and the financial implications attached to metrics guiding performance measures. Such an approach to employee management emphasized the interchangeable and replaceable nature of workers amidst an increasingly routinized organizational environment (West and Bowman, 2016). The ubiquity of surveillance technologies extended to monitoring behaviour away from the organization itself, whereby management were able to observe login activity and track actions for those tasked with reviewing their performance on the mobile app. A culture of hyper connectivity—accentuated by the mobile nature of technologies deployed to monitor individual behaviour away from the organization—regulated actions to ensure individuals kept to task and thus secured employment, evoked feelings of encroachment into

the personal lives of the interviewees and demonstrated an inability to disconnect from the organization:

> **Interviewer:** I'm just wondering, do you feel you can escape the club now?
> **Phil**: Probably less so, and I think this is with the speed of technology and apps and all this sort of thing, unless I lose Wi-Fi and then it's a dream…you know, my phone has gone here now a few times whilst I've been sat here, but if that's [the app and phone] going Ravens rugby, Ravens rugby, Ravens rugby! Whatever the message, whether it's *"watch an important video"* or *"you've left your boots"*, that's in your life isn't it, it's there. It can't not be more in people's lives in my opinion.
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> **Alun:** They've got this new app, we've all been given iPads, so there's an app with every day's training on it, all the games, all the reviews from the week coming up and they can see who's looked at it, who's been watching the clips because they ask you to comment on stuff. I know a couple of boys get pissed off with it because it's all the time, even when you go home from work the boys are like, you know you're in eight till five, and you get home and they send you messages like, "look at this, I want to know tomorrow what's happening here", and the boys are like, "ahh, for fucks sake".
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> **Craig:** like, if you're goin' out for, on the weekend, for a couple of days with the family you don't wanna bring your iPad with you but they'd expect you to do that, you'd pretty much have to do that now…for example one of the players got caught drink driving in the week, if he got dropped from the England team, one of the other players would be very likely to be called up, that'd gone on the app, they would have messaged him on the app saying you're selected for England…It's not just bad news on the app, it's good news, it's anything. It's your only point of communication…it's a message board, it's a wall, it's all your footage, it's all your stats, all your facts.

Robert further highlighted how the infiltration of emerging technologies and a strategy discourse bound by a 'numercalised' (McCabe, 2016) approach to performance management affected employees once away from the organization:

> **Interviewer:** Did the old regime have a mental effect on you?
> **Robert:** Obviously it was more tiring than it is now, because now I do my review, my review now is more about what we felt on the pitch…rather than thinking, you know, lying in bed on a Sunday night and thinking what was the percentage of lineouts we got and how that's gonna look on the game plan sheet on the Monday. It frees up some head space that's for sure.

The permanent gaze of the organization and ease at which information could be circulated—including access to personal information—prompted feelings of performance fatigue and blurred the boundaries between personal lives and institutional agendas. The creation of a virtual environment to report on performance and remotely monitor individual engagement in response to routine online tasks outside of 'official' working hours demonstrated the erosion, or porous nature, of workplace boundaries (Rosenblat, Kneese and

boyd, 2014). By multiplying the means of control through the use of a networked and integrated approach to data capture and the monitoring of employee activity, individuals became caught up in a continual mode of assessment that sought to shape behaviour external to the organization, whereby the workspace became increasingly present in the personal lives of employees (Allen et al., 2007; Fleming and Spicer, 2003). Here behaviour and performance could be tracked, recorded and reported upon through nomadic and mobile means of monitoring (Deleuze, 1992), imparting decisions based upon a remote reality and creating virtual characters to promote and internalize routine obligations (Mattelart, 2010). Moreover, the prevalence of a culture engineered upon data analytics, surveillance technologies and an individualized responsibility to be 'connected' at all times, raised issues pertaining to the emotional and human impact that is often obscured through the imposition of such an approach to performance management:

> **Robert:** You know we're not a financial institution, we're not run on numbers, we're people, we're emotional people.
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> **Craig:** When you're not on the team and you constantly getting' team notifications like, I don't really need this right now, it's kind of like rubbing salt into the wound kind of thing.
>
> **Joe:** It's kind of that extra incentive to play well, it's like, ah fuck Monday is gonna be hellish either individually or collectively…It kind of ruins your weekend and your week to come, yeah that extra level of analysis does add that as well.

With the inclusion of more mobile and interconnected technologies used to collect, collate and monitor information, the organization continued to capture finite aspects of performance, making visible that which could not previously be measured. The information upon which player profiles were compiled determined levels of acceptability and, coupled with the responsibility of tracking one's own performance, regulated behaviour to ensure that the interviewees' digital persona matched that of the metrics and actions established by the management. This extensive level of managerial surveillance, flow of information pertaining to metrics—including peer performance—and heightened level of connectivity revealed underlying anxieties associated with the workplace environment. Indeed, constant exposure and an increased emphasis upon measures of productivity have been seen to impact upon job satisfaction, employee well-being and the opportunity to detach oneself from the organization (Ball, 2009; Colbert, Yee and George, 2016; Mazmanian, Orlikowski and Yates, 2013). As Martinez (2011: 205) notes, 'communication control is about keeping track of the wandering

employee', an aspect of post-industrial management that seeks to regulate employee behaviour and engagement beyond the boundaries of the organization through continuous and (inter)connected networks of information.

Whilst the restrictive nature of the organization under study and the expansive reach of control would suggest a narrow ability to enact any form of resistance, the interviewees were cognizant of the limitations associated with a working environment heavily dictated by a numerical language. Thus, questions were raised concerning the interpretation of key performance data and its relevance to individual progression and reactions captured concerning the voices of disdain present within the organization.

Interpreting and resisting data

An expression of frustration and fatigue surrounding a culture led by analytics was clearly evident within the organization; however, a number of those interviewed spoke of the inherent contradictions surrounding the process of interpreting performance measures. Interviewees were acutely aware of the organization's ability to manipulate data so as to support key decisions enforced by the management, coaching staff and the organization's directors:

> **Henry**: I say I don't have a problem with the amount of statistics, with the amount of monitoring they do with me, but it's the way they [the coaches] then deal with those statistics. I'm very much aware of how you can make statistics appear a certain way to certain people and manipulate them, so that's only where my concern comes in, where one minute it's positive but at whatever point they want to, because of the amount they have on you, they can turn either way, they can bend it wherever they want.

> **Robert:** As a rugby player you do see stats a lot and you can argue with opinion, but it is very difficult to argue with stats, but then you know whichever stats were presented paint the picture that he [former Head Coach] wanted painted...Yeah, so he would blind you, he would hit you with stats and what can you do?
> **Interviewer:** Did that have a silencing effect on the players?
> **Robert:** Yeah, without a doubt, yeah because, like I say, how can you argue with that? It just didn't allow the players to have a real say in what was goin' on.

> **Interviewer:** How did you feel about all the data that was used?
> **Craig:** This is quite funny actually, this is what one of the players said to me when I first joined, he went, "stats are like a bikini, what you can see is adjusted but what you can't see is essential", and that's stuck with me quite a bit.

All interviewees expressed concern surrounding the inaccessibility of algorithms and analytics deployed to carve individual targets and create performance metrics determined to define positions of worth within the organization. The perpetuation of a scientific discourse used to determine accountability excluded those who did not have access to a specialized

knowledge (Tsoukas, 1997; Zyglidopoulos and Fleming, 2011), allowing the privileged few an opportunity to integrate such knowledge so as to 'enforce the dialectic of control' (Leflaive, 1996: 42). Moreover, the use of technology and data analytics for the purpose of transparency and disclosure may, through knowledge translation, work to conceal the representation of complexity and act to empower some whilst excluding or disempowering others (Hansen and Flyverbom, 2015). A significant consequence of viewing control as a means to limit or exclude a particular knowledge manifested in the distrust of both the interpretation of data and management practices evident within the Ravens organization. In addition, a call to reduce the amount of data collected by the organization was proposed by the first-team analyst and Head Coach, expressing a desire to persevere with 'common sense' and reduce the level of complexity that can arise from implementing data analytics to determine outcomes:

> **Interviewer:** It seems that the more work that is made for the players, then the more work is created for the analysts. Would it be in your interest to scale back the data?
> **Nigel:** Oh god yeah, I would push that, I would regularly push the fact that less data would be one of the approaches. I do a post-match that takes me an hour and a half after every game, and I don't see the benefit of it.
>
> **John Duncan:** My strategy is just debate the common sense. I want things to be common sense, like I said, the simpler the message the better for me, I don't wanna be caught up in mathematical bollocks or whatever, or blinded by science, let's just talk it through.

A data-led approach to performance management highlighted the challenges associated with measuring productivity through statistical means. The processing and interpretation of datasets were perceived as labour intensive and, in certain circumstances, lacked relevance regarding a meaningful contribution towards overall performance. As research indicates, desirable performance outcomes may be achieved through various routes, where a good indicator of productivity may differ between employees, and the infiltration of illimitable datasets may contribute towards a higher degree of complexity with the need for more extensive interpretation (Moore and Piwek, 2016; Stohl et al., 2016). Thus, quantification of performance through enhanced surveillance mechanisms and clearly defined metrics can contribute towards greater organizational inefficiencies (Rosenblat et al., 2014). Within the organization there existed a sense of resignation as the inability to challenge opinions of the management was clearly evident. To embody a culture built upon data analytics was perceived by the interviewees as central to upholding the values of a professional identity, and one that aided in securing further employment with the organization:

Interviewer: Was there any resistance to this [culture of data analytics] from the players?
John Duncan: It broke 'em, it broke the players. So the senior players got broke throughout the week, they were like, "it's just no point arguing". And I got the feedback from that, it's in the feedback, we do an exit interview with players you know when they leave, and that was it they just said, "I give up, I give up, I'm just better off keeping me head down and doin' as I'm told".

Alun: There was one time where we won about twenty games in a row and we wouldn't have hit these stats for about seventy percent of the time. So, at the end we'd just be sitting in the meeting like, oh fuck we haven't hit it this time, we knew we hadn't done it but at least we won.
Interviewer: So did anyone speak up in the meetings and say something?
Alun: Yeah, one time…the boys still talk about it now because it was quite funny. So the coach said, "Does anyone disagree with me, I don't mind if anyone disagrees with me"? And Greggsy put his hand up and he was like, "yeah, I disagree with you". And he [the coach] was like, "WHAT! WHY, WHY!?". And Greggsy was like, "oh fuck"!

Richard: It's a 'ball ache' and no use to the players. It's about being professional, it's the job. If you don't want to do it you leave the system.

The use of data analytics within the organization worked effectively to evoke an adherence to a standardized set of behaviours set by significant others, advocating a mode of control that silences through conformity to an uncritically adopted and accepted set of organizational values (Brown and Coupland, 2005). Whilst a minority of those interviewed highlighted infrequent, yet direct, challenges to authority, an approach to control bound by data analytics and surveillance mechanism appeared as an everyday aspect of working life, one that could only be altered through resignation and the search for a professional contract elsewhere. One interviewee recalled an instance where outward resistance was demonstrated resulting in resignation from the club, and further reasserting the importance of adhering to a professional identity:

Craig: One player actually left because of this app, well not purely because of this app…he had a phone, which was just a phone that couldn't get emails just text messages and phone calls that was it, he said, "I'm checking my emails and when I get your [the coaches] message I'll look at it, but if I'm out doin' something and I've got my phone with me I won't get it." And they [coaches] said, "That's not acceptable, you need to get a new phone." He said, "No I don't, it's a phone, it works." And that was where he fell out with coaches and was never picked again really, but because he stood up for it and went, "look while I'm at work you can contact me on my phone, if you need to directly contact me then call me, if not, I'm not at work"…it's that environment now that you've got to do it all or you'll get the boot.

Organizational cultures that promote clear hierarchical structures, or that are dependent on predictability, work to reinforce a collective representation of silence through emphasizing 'speaking out' or 'voicing' disdain as a challenge to authority (Morrison, 2014; Sewell and Barker, 2006). The combination of an authoritarian directorship and the inclusion of performance measures engineered upon data analytics limited the opportunity to resist managerial protocols. The vast majority of individuals restricted their voice either for fear of job security or through a realization that it was futile to question decisions based upon objective 'truths' generated by the organization's data analytics. Despite the lack of ability to impact upon opinions expressed by the managerial hierarchy, some players sought to negotiate with performance analysts so as to manipulate their own personal dataset and portray a statistical profile beneficial for contract negotiations, as detailed by the organization's first-team analysts:

> **Interviewer:** Have players ever asked for you to edit out their mistakes before the Monday morning meeting?
> **Nigel:** I had one player come up to me on a Monday morning once with his iPad on a position in a game and say, "why is that not a dominant that *is* a dominant carry." Because obviously that affects his statistics at the end of the year…
> **Interviewer:** So players might point out something that you've actually missed?
> **Nigel:** They're very, not selfish, but I would think more often or not they would be doing it to try and make sure that their stats were either better or accurate as could be at the end of the year.

The manner through which information or data were interpreted and rendered legitimate became integral to regulating employee performance and behaviour. In this sense, access to information becomes the primary force guiding dominant power relations that shape and facilitate organizational interaction (Munro, 2000). Players at the Ravens were not exposed to the methods of computation that sought to reduce complexity and translate the data into easily digestible metrics. As Ball (2005) notes, resistance to body surveillance requires a disruption in the flow of information, a mode of empowerment that emerges from the individual's ability to reconstitute analytical code, creating and taking ownership over systems of categorization. Whilst some of the interviewees sought to engage in this practice of resistance through negotiation with personnel responsible for the interpretation and analysis of performance data, the extensive reach of surveillance mechanisms and the imposition of punitive measures inevitably led to the creation of a culture that demanded compliance in accordance with clearly defined metrics.

Discussion

This study has sought to explore the effects and consequences of an organization that perpetuated a working environment heavily dependent upon the use of emerging technologies and data analytics. For the participants in this study, a number of critical concerns were raised in response to an organizational culture dominated by data-driven systems of performance management and emerging technologies. Whilst it was apparent that the inability to escape the gaze of the organization was prominent in the minds of the players, and the enhanced scrutiny of surveillance technologies permeated their everyday lives, heightened levels of distrust, anxiety, fear and insecurity were perceived as the most common consequences arising from an environment guided by performance metrics and data surveillance devices. Central to these concerns was the role of data in 'determining life-chances and choices' (Lyon, 2001), and the lack of opportunity to offer an alternative perspective on what was to be considered the most accurate appraisal of performance and productivity.

Managing visibility within the workplace has become a fundamental organizational concern across an array of differing contexts (Flyverbom et al., 2016). Technological innovations have afforded organizations the possibility to expose inefficiencies and identify good indicators of productivity more readily. However, an enhanced visibility has come to reflect wider implications surrounding hierarchical modes of organizational control, employee perceptions of job stability and raised critical concerns regarding the mental health and wellbeing of the workforce (Moore and Piwek, 2017). The use of data analytics within the Ravens organization worked effectively to facilitate an enhanced visibility, yet also stimulated feelings of fear and anxiety for those fixed by clearly definable performance metrics. At the crux of this particular mode of control sits the notion of information, compiled through an amalgamation of socio-technological measures and defined by a numerical language. In borrowing from Deleuze's (1992) publication *Postscripts on the Societies of Control*, the use of contemporary control mechanisms seek to create an organizational culture characterized by open, extensive and overlapping networks of monitoring and observation (Martinez, 2011). Deleuze's (1992: 5) conceptual interpretation of modern control suggests that, 'We no longer find ourselves dealing with the mass/individual pair. Individuals have become 'dividuals', and masses, samples, data, markets, or *'banks"*. In relation to issues of organizational control emphasis is placed upon locating the 'dividual' amidst open and interconnected networks that facilitate more abstract and numerical modes of organizational surveillance. In pursuing this concept of a 'control society', Deleuze (1992: 5) notes that confinement through open networks of monitoring and the continual comparison of performance leads us to administer, 'the

brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes the individuals against one another and runs through each, dividing each within'. This was acknowledged by all interviewees, the 'comparison game' present at the Ravens organization was created through the open dissemination of quantifiable metrics and often in real-time. This worked less as a motivational force and more so as a means to establish opinions imparted by the managerial hierarchy and demarcate those deemed essential to the successful functioning of the organization, enhancing feelings of insecurity surrounding employment and undermining a true sense of collaboration amongst colleagues.

The versatility and reach of emerging technologies also raised concerns surrounding the spatial dimensions tied to organizational control and the breakdown of workplace boundaries. The extraction of information held by the material body led to a transposition of self, wherein data profiles reproduced online identities that signified aspects of worth (Lyon, 2014). Metrics, rankings and scores attached to bodily representations of health, wellbeing and performance led to a technological mode of embodiment that created a complex relationship between the virtual existence of employees and that of their everyday interactions. As such, behaviour became regulated through a permanent visibility enacted by pervasive modes of observation alongside the requirement to replicate, and adhere to, clearly defined virtual characteristics. Such an approach to employee monitoring required individuals to engage with a mode of performativity that called for the deployment of 'impression management' (Goffman, 1959) tactics, whereby a rapid response to virtual interactions demonstrated the characteristics of an ideal worker deemed acceptable by the organization. As such, these additional interactions administered through mobile means not only require an added level of performativity, but render the subject open to more intense personal scrutiny and accountability in their actions to those who continuously sought to monitor and record online activity. The constant dispersion of information pervaded the consciousness of individuals situated within the Ravens organization and became inscribed as to what was considered acceptable within this particular environment, accentuating attention to a particular way of 'being' in multiple settings, among an array personnel and often definable by a single numerical metric.

In this instance, control is exercised over the possibilities of knowledge, attempting to intervene in the transmission of information to create identities that reflect back upon those with whom the data are associated and delineate what is to be thought and who we are to become (Lyon, 2014). Through deconstructing the relevance of information within a 'control society' Deleuze (2006: 17) indicates that, 'information is communicated to us; we are told what we are supposed to be ready or able to do or what we are supposed to believe. Not even

to believe but act as if we believed.' Thus, surveillance mechanisms work to reveal insight into individual habits, lifestyles and commitment to organizational values, a mode of control that extends beyond the boundaries of institutional space and regulates through the acquisition of 'truths' that may not ordinarily be revealed through face-to-face interactions (Ball, 2005). The regulation and control of employees beyond the boundaries of the workplace has become an increasingly common component of the contemporary working environment, an aspect that is accentuated by the development and integration of new technologies. As such, the impact of emerging technologies and the erosion of workplace boundaries holds significance for those seeking to further understand the role of managerial surveillance as it infiltrates into the personal lives of employees, mediating employment opportunities and creating a heightened sense of accountability among the workforce (Rosenblat et al., 2014). Thus, the performance fatigue and expressions of anxiety experienced by the participants within this study is perhaps not surprising, as the spatial arrangement of control traversed the physical parameters of the working environment to represent an exhaustively networked mode of workplace surveillance (Smith, 2016).

It is clear that the rationale in support of data analytics emphasizes the ability to expose efficiencies and reveal truths through an enhanced and objective transparency. However, we must acknowledge that this notion of transparency is orientated by a 'politics of visibility' (Zyglidopoulos and Fleming, 2011). Under the guise of greater transparency organizations maintain the capability to manipulate messages so as to pursue specific strategic directions, shaping behaviour through the concealment and exposition of information (Flyverbom, Christensen and Hansen, 2015; Sauder and Espeland, 2009; Stohl, Stohl and Leonardi, 2016). Whilst a minority of interviewees were comfortable with the deployment of a diverse range of surveillance mechanisms and data analytics, these same individuals also expressed concern for the data that was packaged and presented by the organization's hierarchy. This unease was raised surrounding the inability of data to reflect the singularity of the players' working lives and the complex range of factors that work towards determining levels of productivity (Faÿ, Introna and Puyou, 2010). A lack of insight concerning the translation process—and a heightened awareness surrounding the ability to manipulate data—created a level of distrust and, in some cases, led to a departure from the organization. This seemingly automated process of knowledge production occurred at a greater distance from those under scrutiny at the Ravens, limiting ties to subjective evaluation, personal experience and a holistic approach to appraisals. Previous literature examining surveillance and performance management within the workplace has identified that the enhanced use of technology can undermine existing trust

between employers and employees, decreasing the willingness to engage in cooperative interactions (see Holland and Bardoel, 2016; Jensen and Raver, 2012; Martin, Wellen and Grimmer, 2016; Miller and Weckert, 2000). Here we must consider the consequences of electronic surveillance as operating through a collective arrangement of ubiquitous technologies, key power/knowledge relations and social interactions that exist to (re)enforce particular institutional agendas (Sewell, 2005; West and Bowman, 2016). The process of interpretation is guided by an engagement between both humans and technologies and requires the employment of analysts to extract, refine and reassemble data in such a way that they can be considered 'instruments of perception' (Amoore and Piotukh, 2015). In doing so, employee behaviour is rationalized through the production of an index and a reality seeking to reduce the qualitative complexity of organizational life into quantifiable parts (Hansen and Flyverbom, 2015; West and Bowman, 2016). As Rose (1991: 678) indicates the objectivity imposed by quantification—and an increasingly bureaucratic approach to governance—produces a domain whereby, 'numerical rules constrain: impersonality rather than status, wisdom or experience becomes the measure of truth.'

Despite this, employees within the Ravens were not devoid of any sense of agency, nor did they lack the capability to resist such aspects of organizational control. A direct questioning of emerging technologies, expressions of cynicism towards performance metrics and the attempt to take ownership over data interpretation highlighted examples of resistance witnessed amongst some of the interviewees. Whilst an apparent agency to resist key aspects of managerial practice was indeed evident, such challenges did little to alter the institutional regime as the vast majority of employees conformed to a culture characterised by the use of emerging technologies and data-driven performance management techniques. Here the processing and interpretation of data presents a reality that moves beyond a simple technique of representation, as performance measurement maintains the capability to dictate organizational behaviour and social interaction once meaning is ascribed to metrics by those in positions of authority (Sewell et al., 2011). This emphasis upon a data-driven approach to employee management represents broader concerns surrounding the objectification and manipulation of employee behaviour, wherein strategic decision making rests upon a numerical evidence-based way of thinking to create cultures of conformity that work to suppress the possibilities of resistance (McCabe, 2016).

Conclusion

The cumulative volume of information, and the inclusion of contemporary analytical techniques, have led us to an increasingly rationalized approach to managing organizational life. Perhaps what is of most concern regarding our contemporary moment is the manner in which institutions can be steered by disembedded forms of information that have the potential to become divorced from the social realities they seek to address (Kallinikos, 2013). Indeed, this disconnect appeared present within the organization under study and demonstrated the damaging consequences for organizational life when knowledge is distilled to an efficiency index claiming to reveal a reality steeped in 'uncontaminated measurement' (Hansen and Flyverbom, 2015). For the participants within this study, the accumulation and use of data in sensible ways were identified as two different, yet highly significant, propositions that required deeper consideration by managerial staff within the organization. What was of key concern, both in relation to the wellbeing and future employment of interviewees, was not necessarily the amount of data obtained but the manner in which data were interpreted and communicated to the players and across personnel. As data analytics become a prevalent feature of modern organizations, questions concerning the constitution and interpretation of information becomes increasingly important (Kallinikos, 2013). Organizational practice informed by a logic of data analytics and surveillance technologies have far reaching implications for those subjected to quantitative performance measures, not least of which can impact significantly upon the career progression and mental health and well-being of those exposed to be consistently ineffective in their role.

Additional thoughts allude to the notion of resistance. Similar to research within wider occupational domains (Fleming and Sewell, 2002; Fleming and Spicer, 2003), resistance was voiced amongst participants within this study mostly through subtle displays of cynicism and a limited attempt to appropriate the interpretation process of data analysis. Further enquiry surrounding the capacity to resist the authority of performance metrics—and the conflicts associated with the 'numercalizing' of others—would shed new light on coping strategies used by workers subjected to a mode of 'quantified control' (Burrows, 2012; McCabe, 2016). It is clear that the availability of data and technological systems to establish performance outcomes allows those with limited analytical skills the ability to appropriate data for their own purposes (Hansen and Flyverbom, 2015). The extent to which employees are able to create and deploy personalised algorithms to challenge unwavering truths imparted by institutional analytics is yet to be explored in sufficient depth, and may provide insight into an avenue of resistance perhaps unanticipated within contemporary workplace environments. In accordance with

previous literature, this study sought to extend our understanding of the ways in which organizational incumbents cope with managing technology and data analytics as part of their everyday working lives (see Ball and Wilson, 2000; Flyverbom et al., 2015; McCabe, 2016; Sewell et al., 2011). In doing so, the participant experiences contributed towards a contemporary explication of organizational surveillance and control. Such an approach emphasised the role of emerging technologies and a data-led approach to leadership in dictating future job prospects, reshaping the spatial constraints of the workplace, exacerbating feelings of intrusion, and yet also providing the potential to resist—all be it through limited means—performance management practices.

Whilst we agree with Brown and Coupland (2015) that professional sport represents an extreme example of workplace surveillance, many of the consequences emerging from this study mirror that of other institutional environments. One such example alludes to the quantification, competitive nature and constant scrutiny of work within Higher Education, revealing the deep insecurities and anxieties that perforate the working lives of academics (Knights and Clarke, 2014). Although the use of analytics can work to reveal hidden value and generate efficiencies, it is important that further research focuses on the restrictive consequences and, in drawing from the work of McCabe (2016), emotive responses tied to a more encompassing form of worker control. By exposing the manner in which data-centric, continuous and networked approaches to managing performance may illicit feelings of fear and distrust, we may begin to achieve a clearer understanding of the place of metrics in contributing positively towards organizational practice. If future directions dictate a workplace environment saturated by performance metrics, algorithms and data science, it is necessary that further critical questions are raised concerning the ability of employees to gain access to the analytical procedures tied to knowledge production and the manner in which managerial decisions are being inspired by an algorithmic way of thinking.

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[i] Hudl Sportscode is a video analysis software package that is used to capture video footage of performances, code different events that occur in the footage and evaluate results. The software provides analysts with the capability to define certain codes to suit specific KPIs, create filters to play back key moments and execute calculations of the data as it is being coded.